

# Reiter's disease in a female, presenting as erythema nodosum

A. McMILLAN

*Department of Venereology, Royal Infirmary of Edinburgh, EH3 9YW*

Erythema nodosum, as a non-specific hypersensitivity reaction, occurs in association with many disorders (Boyle and Buchanan, 1971), but has not hitherto been clearly defined in association with Reiter's disease. Hancock (1960) mentioned that erythema nodosum occurred in some of his cases, but gave no details, and did not state whether these were male or female.

The following is an account of a young woman who presented with erythema nodosum, and whose case was subsequently diagnosed as one of Reiter's disease.

## Case report

A 20-year-old unmarried woman, who was admitted to hospital in May, 1974, gave an 18-month history of intermittent frequency of micturition, dysuria, and vaginal discharge. One year before admission, she had received treatment with Ampicillin and Nitrofurantoin on account of 'cystitis'. Over the preceding 6 months, she had noticed increasing malaise and lassitude.

A month before admission, she had developed a sore throat and red, painful swellings on both shins. These swellings had persisted unchanged for about a week and her general practitioner, having made the diagnosis of erythema nodosum, treated her with prednisolone for 10 days. The skin lesions rapidly disappeared, but when the prednisolone was withdrawn a fresh crop appeared with similar characteristics. A throat swab taken by her general practitioner grew only commensal organisms, and the anti-streptolysin O titre was 90 units/ml. Antibiotics were not given at any stage of that illness.

For 3 days before referral she complained of aching in both ankle joints and in the right knee joint.

There had been no gastrointestinal upsets, and she gave no past or present history of conjunctivitis. There was also no past history of arthropathy and no family history of rheumatic diseases.

She had a 10-month-old son, delivered in hospital by forceps. The boy had been well at birth, and had had no evidence of conjunctivitis. There had been no other pregnancies. She had sexual intercourse for the first time at the age of 17, and had since had four contacts, all but one being casual. No form of contraception had been used at any time, except for a few months after the birth of the child.

## Examination

On admission, she looked ill, with marked pallor. Her temperature was 37.5°C. Pain limited movement of the

right knee joint, but there was no effusion in the joint. On the anterior aspects of both legs there were purple lesions, about 2 cm. in diameter, raised above the surface of the skin, firm and tender to palpation. In the course of a few days, these lesions changed colour from purple to deep blue and then to yellow, and then faded leaving no scarring. No lesions were noted on the feet, and no other skin lesions were found on examination. The pulse rate (110 per minute) was regular in time and force and the blood pressure was 120/70. The jugular venous pulse was not elevated and heart sounds 1 and 2 were present, with a soft apical mid-systolic murmur. There was no lymphadenopathy.

The throat showed a diffuse erythema of the soft palate, tonsils, and uvula, sharply delineated from normal mucosa anteriorly.

Genital examination showed a small wart on the mons veneris. There was no obvious vulvitis, Bartholin's, or urethritis. The vagina looked healthy, but there was marked cervicitis with a large erosion. The uterus and adnexae appeared normal.

The day after admission, a large effusion developed in the right knee joint.

## Clinical investigations

The Mantoux test was negative at 1 in 10 dilution. Sigmoidoscopy to 30 cm. showed no abnormalities and the electrocardiogram was normal.

Hb 11.4 g. per 100 ml., haematocrit 33 per cent., mean corpuscular volume 78  $\mu\text{m}^3$  (fl.), mean corpuscular haemoglobin concentration 33.5 per cent., mean corpuscular haemoglobin 25.5  $\mu\text{g}$ . (pg.). White cell count 11,600 per c.mm. Blood film showed normocytic, normochromic anaemia, with a simple neutrophilia. Erythrocyte sedimentation rate 90 mm./1st hr.

Total serum protein 7.04 g. per 100 ml., albumin 3.97 g. per 100 ml. Electrophoresis showed increased  $\alpha_2$  globulin. Serum IgG, IgM, and IgA were normal.

Urethral smear showed pus and numerous Gram-negative and Gram-positive organisms, but no gonococci were seen and there was no growth on Thayer-Martin medium. Mid-stream urine showed pus, but no growth on culture. Cervical smear showed pus cells with Gram-negative and Gram-positive organisms, but no organisms grew on culture. Herpesvirus was not isolated from cervical scrapings. Throat swab grew commensal organisms only. Blood cultures on three consecutive occasions were negative. Antistreptolysin-O titre 80 units/ml. Paul-Bunnell reaction was negative and serological investigations for mumps, rubella, mycoplasma, herpes, and psittacosis, were also negative in acute and convalescent sera. Cardiolipin Wasserman and VDRL tests were negative. Agglutination

tests for *Brucella* were negative. Synovial fluid was turbid and contained leucocytes, but no organisms were seen in Gram-stained films, and no organisms, including *Mycobacterium tuberculosis*, were isolated.

Examinations for R.A. factor, antinuclear factor, and L.E. cells were negative on two occasions.

The sacroiliac joints (Fig. 1) showed loss of articular outline on the right side, with irregularity in the width of the joint space. Erosions were seen in the same joint, with sclerosis beyond the area of erosion. Chest x ray (Fig. 2) showed patchy collapse in the left mid-zone, but no hilar lymphadenopathy. Radiological examination of lumbar spine, pubis, feet, and hands, was negative.



FIG. 1 X ray of sacroiliac joints, showing erosions and juxta-articular sclerosis (arrowed)

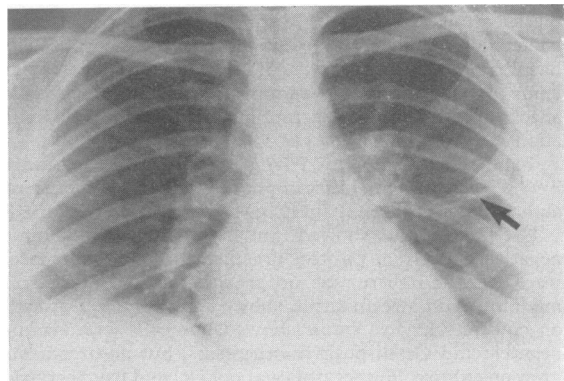


FIG. 2 Chest x ray taken on day of admission, showing linear collapse (arrowed) in left mid-zone

#### Progress

She was treated with 100 mg. phenylbutazone three times a day for one week and 250 mg. tetracycline four times a

day for one week. Within a week the symptoms, particularly the arthritic symptoms, had improved markedly. The fever subsided at the end of the second week and the E.S.R. fell to 20 mm./1st hr. A chest x ray showed complete clearing of the left mid-zone.

#### Result

2 months after discharge from hospital, she was asymptomatic. In particular, there had been no recurrence or erythema nodosum, and no evidence of conjunctivitis at any stage. The E.S.R. at this time was 20 mm./1st hr.

#### Consort

Her regular sexual partner, an 18-year-old labourer, consented to examination and freely admitted promiscuous sexual behaviour, including at least two homosexual contacts. He was completely asymptomatic, and genital examination showed no abnormality. Early morning smear and urine analysis were negative, and the prostatic fluid was normal. The TPHA and VDRL tests were negative on two occasions.

#### Discussion

Not all three features of Reiter's disease need be present for the diagnosis to be made. It is stated that Reiter's disease may be diagnosed when any two symptoms of the triad occur, or even one symptom, if several other characteristic features are also present (B.M.J., 1971).

The genital component of Reiter's disease in the female varies from case to case. In a case reported by Clark (1951) there was vaginal discharge but no gonococci were found on examination. Rinkoff (1952) described a case of Reiter's disease in a 49-year-old woman who had vaginitis and abacterial cystitis. Reid (1954) described haemorrhagic abacterial cystitis in a 62-year-old woman with Reiter's disease. Oates and Csonka (1959), in a paper describing Reiter's disease in the female, discussed fourteen patients, two of whom had a recurrence of the condition. Cervicitis with or without erosion was present in thirteen, urethritis in six, salpingitis in four, and cystitis in three, in two of which it was haemorrhagic. In this particular series seven cases were associated with an initial gonococcal infection and nine were considered to be related to non-specific infection. Vaginitis and cervicitis are very common in patients who have no arthritis.

In the case described above, there was a history of intermittent episodes of vaginal discharge, frequency of micturition, and dysuria over a period of 18 months. She had received Ampicillin and Nitrofurantoin 12 months before referral. As indicated, she was found to have cervicitis with a large erosion and smears from the urethra and cervix showed pus cells and numerous Gram-positive and Gram-negative organisms, but no gonococci were seen or cultured.

X-ray examination of the sacroiliac joints showed unilateral sacroiliitis, the diagnosis being made on the basis of loss of articular outline, with irregularity in

the width of the joint space due to subarticular erosions which were associated with sclerosis beyond the area of erosion. This appearance was particularly prominent in the first segment of the sacrum, and according to Murray, Oates, and Young (1958) changes at this level give a reliable indication of abnormality. They also considered that the changes described above were indistinguishable from those of ankylosing spondylitis which may closely resemble Reiter's disease. Sacroiliac joint abnormalities in the former disease, however, are generally stated to be bilateral, and in a comparison of rheumatoid arthritis, ankylosing spondylitis, and Reiter's disease in males, Mason, Murray, Oates, and Young (1959) found bilateral sacroiliitis in all of their 38 cases of ankylosing spondylitis. They also noted bilateral changes in those cases of Reiter's disease in which radiological sacroiliac joint abnormalities were present. In a series of 46 men reported by Weldon and Scalettar (1961), in four out of fifteen with abnormal sacroiliac joints the changes were unilateral.

Sacroiliitis is usually seen in the chronic stage of Reiter's disease, although Oates and Young (1959) stated that, in an unspecified number of patients, erosive changes were observed to develop in the course of a few weeks as in the case reported above.

An erythematous lesion on the soft palate has been described in Reiter's disease (King, 1964), but no such lesion has been reported in ankylosing spondylitis.

The distinction between ankylosing spondylitis and Reiter's disease has been blurred, however, by the recent discoveries of HL-A 27 antigen occurring in both Reiter's disease and ankylosing spondylitis. Brewerton, Caffrey, Nicholls, Walters, Oates, and James (1973a) found HL-A 27 in 72 of 75 patients with classical ankylosing spondylitis and in three of 75 controls. Brewerton, Caffrey, Hart, James, Nicholls, and Sturrock (1973b) identified HL-A 27 in 76 per cent. of 33 patients with Reiter's disease, but only in 9 per cent. of cases of non-gonococcal urethritis and in 9 per cent. of controls. In the case described in this paper tissue typing was not performed because of technical difficulties.

As already indicated, erythema nodosum occurs in association with many disorders, but in about 22 per cent. of cases (Hannuksela, 1971) there may be no obvious underlying disease. That streptococci were not responsible in the above case is suggested by failure to grow the organism from any site, and by the low antistreptolysin-O titres. There was no evidence of sarcoidosis although the girl was in the appropriate age group. Chest x ray did not show evidence of tuberculosis, and a tuberculin test was negative. There was no history of gastrointestinal disorder, and sigmoidoscopy to 30 cm. was normal. There was no evidence of viral infection on serological investigation.

She had stopped taking oral contraceptives 7 months before examination and, according to Hannuksela (1971), if oral contraceptives are responsible for erythema nodosum, they will usually have been started in the preceding 2 months.

Lung changes have been reported previously in Reiter's disease (Hall and Finegold, 1953; Lafon, Pagès, Roux, Temple, and Minvielle, 1955) and it is interesting that this girl had a transient opacity, consistent with lobular collapse, in the left mid-zone.

From the above data, the diagnosis fits reasonably into the definition of Reiter's disease, even although this is rare in females and cervicitis and sacroiliitis are non-specific.

## Summary

The case history of a female who presented with erythema nodosum is described, and the diagnosis of Reiter's disease is proposed. Reference is made to literature on Reiter's disease in the female and to sacroiliac joint abnormalities which have been observed in this condition.

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